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# Influence of Preconception Care on Maternal Health Outcomes in Selected Fertility Clinics in Port Harcourt, Rivers State, Nigeria

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## Abstract

The study assessed the influence of preconception care on maternal health outcomes in selected fertility clinics in Port Harcourt, Rivers State, Nigeria. The descriptive cross-sectional analytical design was adopted in this study. The population for the study consisted of two hundred (200) women attending fertility clinics in Port Harcourt. The sample size for the study was 146 which was selected using a convenience sampling method. Data was collected using a structured questionnaire with reliability coefficient of 0.84. Data analysis was carried out with the aid of SPSS (V-23) using statistical tools such as percentage, mean and Chi-square at 0.05 level of significance. The findings of the study showed that the extent to which preconception care is provided was high (2.82±1.26). Preconception care has a high impact on maternal health outcomes which were outlined thus: preconception care increases the chances of successful pregnancy (3.50±0.76), it helps to mitigate risk factors before and during pregnancy (3.49±0.72), it helps woman to know the right drug to be taken thereby curbing drug/substance abuse before and during pregnancy (3.47±0.71), and it helps to reduce the risk of complications during pregnancy (3.41±0.68). The factors influencing preconception care were: poor awareness (3.45±0.70), underlying medical conditions of women (3.35±0.91), affordability of care (3.33±0.84), and accessibility of care (3.31±0.64). It was concluded that, preconception care plays a pivotal role in enhancing a healthy conception and maternal health outcomes It was recommended among others that the ministry of health should create awareness and incorporate preconception care into routine maternal healthcare services at the primary healthcare facilities, to achieve better maternal outcome.

*Keywords*: maternal, outcomes, preconception care, Port Harcourt

## Introduction

Preconception care exerts a profound and multifaceted impact on maternal health outcomes. The primary goal of preconception care is to identify and address potential risk factors that may affect fertility, pregnancy outcomes, and the health of both the mother and the baby. This concept underscores the importance of proactive planning and preparation before attempting to conceive, emphasizing the idea that a healthy pregnancy begins before conception itself (American College of Obstetricians and Gynecologists, 2015). In the context of fertility clinics, preconception care takes on added significance because individuals or couples seeking fertility treatments often face unique challenges and complexities. According to the American Society for Reproductive Medicine (2020), preconception care involves a multidisciplinary approach that includes medical assessment, lifestyle modifications, and psychological support to ensure the best possible outcomes.

The domain of preconception care extends beyond the physical and encompasses a vital facet often relegated to the shadows: This component underscores the profound influence of emotional and mental well-being on the journey towards conception and a successful pregnancy. It is recognition that fertility challenges can exact a heavy emotional toll, leading individuals or couples to navigate a complex terrain marked by stress, anxiety, and even depression (Frederiksen et al., 2015). In acknowledgment of these emotional struggles, fertility clinics are increasingly attuned to the importance of addressing psychological well-being as an integral part of preconception care. Through the provision of counseling services and support groups, clinics offer safe spaces for individuals to express their emotions, share their experiences, and seek guidance from trained professionals. These support mechanisms are not merely adjuncts to medical care but are recognized as essential components of the holistic approach to preconception care (American Public Health Association, 2018).

Preconception care is a crucial concept in fertility clinics that encompasses a range of medical, psychological, and lifestyle interventions aimed at optimizing a couple's chances of conceiving a healthy pregnancy. Addressing a spectrum of medical, lifestyle, and psychological factors before conception, significantly contributes to the well-being of expectant mothers, fostering healthier pregnancies and reducing the risks of complications (Johnson et al., 2019). One of the primary ways in which preconception care influences maternal health outcomes is by mitigating risk factors. Through comprehensive medical assessments, underlying medical conditions such as diabetes mellitus, hypertension, or thyroid disorders can be identified and managed effectively before conception (Johnson et al., 2018). This proactive approach minimizes the risks associated with uncontrolled chronic conditions during pregnancy, reducing the likelihood of complications like gestational diabetes or preeclampsia.

Maternal health outcomes in fertility clinics are a critical aspect of reproductive medicine, as they directly impact the well-being of women undergoing fertility treatments and their potential children. The concept of maternal health outcomes in this context revolves around the various factors and considerations that affect a woman's health during the process of assisted reproduction, from initial consultation to pregnancy and postpartum care. Maternal health outcomes in fertility clinics are influenced by multiple factors, including the type of fertility treatment pursued, the age and overall health of the woman, and the quality of care provided by the fertility clinic. These outcomes are of paramount importance, as they can have significant implications not only for the individual woman but also for society at large (American College of Obstetricians and Gynecologists, 2015).

One key aspect of maternal health outcomes in fertility clinics is the impact of various fertility treatments on a woman's physical and emotional well-being. In vitro fertilization (IVF), for instance, involves a series of hormone injections and invasive procedures, which can lead to physical discomfort, emotional stress, and potential complications. Monitoring and managing these aspects of a woman's health are crucial to ensuring a safe and successful fertility treatment journey. Moreover, the age of the woman undergoing fertility treatments is a critical factor in maternal health outcomes. Advanced maternal age is associated with a higher risk of pregnancy complications, such as gestational diabetes and hypertension, as well as a higher likelihood of chromosomal abnormalities in the fetus. Fertility clinics must provide adequate counseling and support to older women to mitigate these risks and promote healthier pregnancies (National Institutes of Health, 2023).

The quality of care provided by fertility clinics also plays a pivotal role in maternal health outcomes. Clinics that adhere to best practices, maintain rigorous quality control measures, and provide comprehensive preconception care tend to achieve better outcomes. Matthew et al. (2012) emphasized the importance of standardized protocols and patient-

centered care in improving maternal health outcomes in fertility clinics. Therefore, the concept of maternal health outcomes in fertility clinics encompasses a wide range of factors that affect the health and well-being of women undergoing assisted reproduction. It involves managing the physical and emotional challenges of fertility treatments, addressing age-related risks, and ensuring the highest standards of care (American Society of Clinical Oncology, 2023). As ongoing research continues to shed light on these aspects, fertility clinics must remain committed to optimizing maternal health outcomes to help women achieve their dream of becoming mothers while safeguarding their overall health. This not only benefits individual patients but also contributes to advancing the field of reproductive medicine as a whole

Poor utilization of preconception care can deter the success of any effort geared towards achieving pregnancy. Sub-optimal implementation of preconception care in any fertility clinic can also affect the expected maternal health outcome negatively because, preconception care can help ease complications associated with pregnancy. The challenges of infertility are aggravated by underutilization of preconception care. Couples, particularly the female partner can encounter complications trying to achieve pregnancy, but worsened when there is no adequate preconception care. Such complications also contribute to maternal morbidity and mortality. Maternal mortality remains a paramount global health problem, mainly in sub-Saharan Africa where more than 50% of maternal deaths occurred. Worldwide, more women of reproductive age die annually from complications associated with pregnancy and childbirth (World Health Organization, 2016). Some of such complications associated with pregnancy would be averted with adequate preconception care. Fertility, pregnancy, and childbirth are natural phenomenon but could have devastating effects on the health of both the mother and her baby if proper care is not given by a professional health care provider before, during and after pregnancy. Thus, this study seeks to investigate the impact of preconception care on maternal health outcomes in selected fertility clinics in Port Harcourt, Rivers State, Nigeria.

Reproductive health is central to maternal well-being, and preconception care plays a pivotal role in optimizing it. For instance, early diagnosis and management of conditions such as polycystic ovary syndrome (PCOS) or endometriosis can enhance fertility and reduce the risk of complications during pregnancy (Johnson et al., 2018). Preconception care, if necessary, can be initiated with greater precision, increasing the chances of a successful pregnancy. However, more emphasis has been on prenatal and postnatal care of women with little focus on preconception care. In our society today, the word preconception care is even strange to a lay man unlike antenatal. This concretizes the inattentiveness to preconception care in maternal healthcare in Port Harcourt, and points to the fact that there is still a lot to be done by the fertility clinics in terms of preconception care in order to achieve expected maternal health outcome. Thestudy is to investigate the impact of preconception care on maternal health outcomes in selected fertility clinics in Port Harcourt. Three research questions guided this study:

1. To what extent preconception care is provided in selected fertility clinics in Port Harcourt, Rivers State?
2. What is the impact of preconception care on maternal health outcomes in selected fertility clinics in Port Harcourt, Rivers State?
3. What are the factors influencing preconception care in selected fertility clinics in Port Harcourt, Rivers State?

**Hypotheses**

Three null hypotheses were formulated and tested at 0.05 level of significance:

1. There is no significant relationship between preconception care and maternal health outcomes in selected fertility clinics in Port Harcourt, Rivers State.
2. There is no significant relationship between maternal age and preconception care in selected fertility clinics in Port Harcourt, Rivers State.
3. There is no significant relationship between reproductive history of women and preconception care in selected fertility clinics in Port Harcourt, Rivers State.

**Methodology**

The descriptive cross-sectional analytical design was adopted with a population consisting of two hundred (200) women attending fertility clinics in Port Harcourt.The sample size for the study was 146 which was determined using the Taro Yamane's formula: $n = N / 1 + N (e)^2$. Where: n = Sample size; N = Population size; e = level of precision (0.05). Applying the above, $n = 200 \div [1 + (200 \times (0.05)^2 \rfloor = 133$. Adding 10% non-compliance rate; n is 146. The convenience sampling method was used to select the sample. Data was collected with a structured questionnaire with a reliability coefficient of 0.84. The questionnaire consisted of four sections. Section A focused on the personal characteristics of the respondents such as age, parity, employment status, educational status, and religious affiliation. Section B focused on the utilization of preconception care on a modified four-point Likert Scale of very high extent, high extent, low extent and very low extent. Section C focused on the impact of preconception care on maternal outcome while section D focused on the factors influencing preconception care, in line with the objectives of the study.

Completed questionnaires were collected, coded and entered into the computer using the Statistical Package for Social Science (SPSS) version 25.0. Descriptive statistics such as percentage was used to analyze the socio-demographic data of the respondents; mean, and standard deviation were used to answer the research questions one to three. Inferential statistics such as Chi-square was used to test the association of variables of interest. All the hypotheses were tested at 0.05 level of significance. An observation was said to be statistically significant if the p-value was less than 0.05.

**Ethical Consideration**

The researcher obtained ethical approval from the ethics committee of the Africa Centre of Excellence as well as the fertility clinics where the study was carried out. The researcher obtained consent from the participants guaranteeing the confidentiality and harm-free nature of the study assuring them of the benefits of the study and their ability to withdraw from the study at any time they which to do so. The respondents were assured of anonymity, hence, they did not need to write their names on the questionnaire. Rights and confidentiality of subjects as regards personal data were maintained.

## Results

**Table 1: Percentage distribution showing socio-demographic characteristics of the respondents (N = 139)**

| Socio-demographic characteristics | | Frequency | Percentage |
|---|---|---|---|
| Age | 20-24 | 26 | 18.7 |
| | 25-29 | 30 | 21.6 |
| | 30-34 | 34 | 24.5 |
| | 35-39 | 19 | 13.7 |
| | 40-44 | 6 | 4.3 |
| | 45-49 | 23 | 16.5 |
| | 66.00 | 1 | 0.7 |
| Religion | Christianity | 131 | 94.2 |
| | Islam | 5 | 3.6 |
| | Others | 3 | 2.2 |
| Marital status | Single | 34 | 24.5 |
| | Married | 97 | 69.8 |
| | Divorced | 2 | 1.4 |
| | Widowed | 6 | 4.3 |
| Education | None | 5 | 3.6 |
| | Primary | 8 | 5.8 |
| | Secondary | 26 | 18.7 |
| | Tertiary | 100 | 71.9 |
| Parity | One | 77 | 55.4 |
| | 2-3 | 37 | 26.6 |
| | Above 3 | 25 | 18.0 |
| Employment status | Civil servant | 48 | 34.5 |
| | Self employed | 65 | 46.8 |
| | Working in private setting | 3 | 2.2 |
| | Fishing | 5 | 3.6 |
| | Not working | 18 | 12.9 |

Table 1 presents the socio-demographic characteristics of the respondents. The result showed that about one quarter 34(24.5%) were aged 30-34 years, 30(21.6%) were aged 25-29 years; majority 131(94.2%) were Christians by religion, more 97(69.8%) were married; 100(71.9%) had tertiary education; more than half 77(55.4%) had only one child while 37(26.6%) had 2-3 children; and more 65(46.8%) were self-employed while 48(34.5%) were civil servants.

**Table 2: Extent to which preconception care is provided in selected fertility clinics in Port Harcourt, Rivers State (N = 139)**

| SN | Items | VLE | LE | HE | VHE | $\bar{X}$ | S.D. | Remark |
|---|---|---|---|---|---|---|---|---|
| 1 | Medical history was assessed | 19 | 8 | 52 | 60 | 3.10 | 1.02 | High extent |
| 2 | Provided with the necessary vaccines to enhance my health | 23 | 13 | 43 | 60 | 3.01 | 1.09 | High extent |
| 3 | Provided nutrition information on particular diet | 15 | 40 | 46 | 38 | 2.99 | 0.82 | High extent |
| 4 | Underwent medical assessment | 21 | 9 | 59 | 50 | 2.99 | 1.02 | High extent |
| 5 | Genetic and family history was also assessed | 20 | 25 | 50 | 44 | 2.85 | 1.03 | High extent |
| 6 | Provided with micro-nutrient supplement during the preconception care | 24 | 22 | 46 | 47 | 2.83 | 1.08 | High extent |
| 7 | Had infectious screening | 34 | 21 | 35 | 49 | 2.71 | 1.19 | High extent |
| 8 | Provided with preconception counselling for psychological support | 32 | 27 | 41 | 39 | 2.63 | 1.12 | High extent |
| 9 | Counselling on lifestyle modification | 32 | 30 | 39 | 38 | 2.60 | 1.12 | High extent |
| 10 | Had genetic screening/counselling and genital examination | 30 | 38 | 32 | 39 | 2.58 | 1.12 | High extent |
| | **Grand mean** | **25** | **23** | **44** | **46** | **2.82** | **1.26** | **High extent** |

Criterion mean = 2.50. Guide: 0 - 1.49 = very low extent (VLE); 1.50 - 2.49 = low extent (LE); 2.50 – 3.49 = high extent (HE); 3.50 – 4.00 = very high extent (VHE)

Table 2 revealed the extent to which preconception care is provided in selected fertility clinics in Port Harcourt, Rivers State. The result showed that the grand mean of 2.82±1.26 is greater than the criterion mean of 2.50, indicating a high extent to which preconception care is provided. Specifically, medical history was assessed (3.10±1.02), respondents were: provided with necessary vaccines to enhance health (3.01±1.09), provided nutrition information on particular diet (2.99±0.82), and underwent medical assessment (2.99±1.02). Thus, the extent to which preconception care is provided in selected fertility clinics in Port Harcourt, Rivers State was high.

**Table 3: Impact of preconception care on maternal health outcomes in selected fertility clinics in Port Harcourt, Rivers State (N = 139)**

| SN | Items | VLI | LI | HI | VHI | $\bar{X}$ | S.D. | Remark |
|---|---|---|---|---|---|---|---|---|
| 1 | It increases the chances of successful pregnancy | 6 | 5 | 42 | 86 | 3.50 | 0.76 | Very high impact |
| 2 | Preconception helps to mitigate risk factors before and during pregnancy | 3 | 9 | 44 | 83 | 3.49 | 0.72 | High impact |
| 3 | Preconception helps woman to know the right drug to be taken, thereby curbing drug/substance abuse | 3 | 8 | 49 | 79 | 3.47 | 0.71 | High impact |
| 4 | Preconception helps to reduce the risk of complications during pregnancy | 3 | 6 | 61 | 69 | 3.41 | 0.68 | High impact |
| 5 | It can prevent serious infections during pregnancy, thereby reducing the risk of birth defects | 6 | 8 | 49 | 76 | 3.40 | 0.79 | High impact |
| 6 | Preconception promotes good dietary practices which enhance maternal health | 6 | 9 | 54 | 79 | 3.35 | 0.79 | High impact |
| 7 | Preconception also helps to mitigate pregnancy-induced diseases, such as gestational diabetes, and hypertension | 5 | 14 | 48 | 72 | 3.35 | 0.80 | High impact |
| 8 | Preconception aids early diagnosis and management of conditions in order to enhance fertility | 3 | 16 | 52 | 68 | 3.33 | 0.77 | High impact |
| 9 | It helps women to manage stress, anxiety and depression during the preconception period | 9 | 15 | 36 | 79 | 3.33 | 0.91 | High impact |
| 10 | Reduction of poor perinatal outcomes such as low birth weight, miscarriage and preterm birth | 8 | 7 | 58 | 66 | 3.31 | 0.82 | High impact |
| | **Grand mean** | **5** | **10** | **49** | **76** | **3.39** | **0.77** | **High impact** |

Criterion mean = 2.50. Guide: 0 - 1.49 = very low impact (VLI); 1.50 - 2.49 = low impact (LI); 2.50 – 3.49 = high impact (HI); 3.50 – 4.00 = very high impact (VHI)

Table 3 revealed the impact of preconception care on maternal health outcomes. The result showed that the grand mean of 3.39±0.77 is greater than the criterion mean of 2.50, indicating a high impact of preconception care on maternal health outcomes. Specifically, preconception care increases the chances of successful pregnancy (3.50±0.76), it helps to mitigate risk factors before and during pregnancy (3.49±0.72), it helps woman to know the right drug to be taken, thereby curbing drug/substance abuse (3.47±0.71), and it helps to reduce the risk of complications during pregnancy (3.41±0.68). Thus, preconception care has a high impact on maternal health outcomes in selected fertility clinics in Port Harcourt, Rivers State.

**Table 4: Factors influencing preconception care in selected fertility clinics in Port Harcourt, Rivers State (N = 139)**

| SN | Items | SD | D | A | SA | $\bar{X}$ | S.D. | Remark |
|---|---|---|---|---|---|---|---|---|
| 1 | Poor awareness about preconception care can inhibit its utilization | 2 | 11 | 49 | 77 | 3.45 | 0.70 | Strongly agree |
| 2 | Underlying medical conditions of women can inhibit preconception care | 13 | 2 | 48 | 76 | 3.35 | 0.91 | Strongly agree |
| 3 | The affordability of care can inhibit preconception care | 9 | 6 | 54 | 70 | 3.33 | 0.84 | Strongly agree |
| 4 | The accessibility of care can inhibit preconception care | 3 | 4 | 79 | 53 | 3.31 | 0.64 | Strongly agree |
| 5 | Poor educational status can inhibit preconception care | 8 | 13 | 54 | 64 | 3.25 | 0.85 | Strongly agree |
| 6 | The reproductive history of women can inhibit preconception care | 6 | 14 | 73 | 46 | 3.14 | 0.77 | Strongly agree |
| 7 | The socio-economic status of the women can inhibit preconception care | 10 | 16 | 67 | 46 | 3.07 | 0.86 | Strongly agree |
| 8 | The age of a woman can inhibit preconception care | 18 | 14 | 54 | 53 | 3.02 | 1.00 | Strongly agree |
| 9 | Spousal involvement can inhibit preconception care | 21 | 25 | 44 | 49 | 2.87 | 1.06 | Strongly agree |
| | **Grand mean** | **10** | **12** | **58** | **58** | **3.19** | **0.84** | **Strongly agree** |

Criterion mean = 2.50. Guide: 0 - 1.49 = strongly disagree (SD); 1.50 - 2.49 = disagree (D); 2.50 – 3.49 = agree (A); 3.50 – 4.00 = strongly agree (SA)

Table 4 presents the factors influencing preconception care in selected fertility clinics in Port Harcourt, Rivers State. The result showed that the factors influencing preconception care in selected fertility clinics in Port Harcourt, Rivers State were: poor awareness (3.45±0.70), underlying medical conditions of women can (3.35±0.91), affordability of care (3.33±0.84), and accessibility of care (3.31±0.64).

**Table 5:Chi-square test showing relationship between preconception care and impact on maternal health outcomes in selected fertility clinics in Port Harcourt**

| Impact on maternal health outcome | Extent of preconception care | | | | df | $\chi 2$ | **p-value** | **Decision** |
|---|---|---|---|---|---|---|---|---|
| | VLE Freq. | LE Freq. | HE Freq. | VHE Freq. | | | | |
| Very low impact | 0 | 0 | 0 | 3 | 9 | 32.90 | 0.00* | $H_o$ rejected |
| Low impact | 10 | 4 | 2 | 0 | | | | |
| High impact | 15 | 10 | 15 | 12 | | | | |
| Very high impact | 7 | 13 | 24 | 24 | | | | |
| Total | 32 | 27 | 41 | 39 | | | | |

*Significant; p<0.05

Table 5 presents the chi-square test of relationship between preconception care and impact on maternal health outcomes in selected fertility clinics in Port Harcourt. The result showed that there was a relationship between preconception care and impact on maternal health outcomes ( $\chi 2 = 32.90$, df = 9; p <0.05). Thus, the null hypothesis which stated that there is no significant relationship between preconception care and impact on maternal health outcomes in selected fertility clinics in Port Harcourt was rejected.

**Table 6:Chi-square test showing relationship between maternal age and impact on maternal health outcomes in selected fertility clinics in Port Harcourt**

| Maternal age | Extent of preconception care | | | | df | $\chi 2$ | **p-value** | **Decision** |
|---|---|---|---|---|---|---|---|---|
| | VLE Freq. | LE Freq. | HE Freq. | VHE Freq. | | | | |
| 20-24 | 5 | 2 | 13 | 6 | 18 | 55.48 | 0.00* | $H_o$ rejected |
| 25-29 | 12 | 10 | 3 | 5 | | | | |
| 30-34 | 10 | 4 | 4 | 16 | | | | |
| 35-39 | 3 | 7 | 2 | 7 | | | | |
| 40-44 | 2 | 0 | 4 | 0 | | | | |
| 45-49 | 0 | 4 | 14 | 5 | | | | |
| **Total** | 32 | 27 | 41 | 39 | | | | |

*Significant; p<0.05

Table 6 presents the chi-square test of relationship between maternal age and impact on maternal health outcomes in selected fertility clinics in Port Harcourt. The result showed that there was a relationship between maternal age and impact on maternal health outcomes ( $\chi 2 = 55.48$, df = 18; p<0.05). Thus, the null hypothesis which stated that there is no significant relationship between maternal age and impact on maternal health outcomes in selected fertility clinics in Port Harcourt was rejected.

**Table 7:Chi-square test showing relationship between reproductive history and impact on maternal health outcomes in selected fertility clinics in Port Harcourt**

| Parity | Extent of preconception care | | | | df | $\chi 2$ | **p-value** | **Decision** |
|---|---|---|---|---|---|---|---|---|
| | VLE Freq. | LE Freq. | HE Freq. | VHE Freq. | | | | |
| One | 18 | 20 | 23 | 16 | 6 | 13.75 | 0.03* | $H_o$ rejected |
| 2-3 | 7 | 2 | 10 | 18 | | | | |
| >3 children | 7 | 5 | 8 | 5 | | | | |
| **Total** | 32 | 27 | 41 | 39 | | | | |

*Significant; p<0.05

Table 7 presents the chi-square test of relationship between reproductive historyand impact on maternal health outcomes in selected fertility clinics in Port Harcourt. The result showed that there was a relationship between reproductive historyand impact on maternal health outcomes ( $\chi 2 = 13.75$, df = 6; p<0.05). Thus, the null hypothesis which stated that there is no significant relationship between reproductive historyand impact on maternal health outcomes in selected fertility clinics in Port Harcourt was rejected.

**Discussion of findings**

The findings of the study showed that the extent to which preconception care is provided in selected fertility clinics in Port Harcourt, Rivers State was high. This result is not surprising because the fertility clinics basically take care of women who are desirous to become pregnant and as such must be ready to receive care provided for them before their conception to forestall any unique challenges and complexities. The study's result corroborates that of Hemsing et al. (2017) which showed a high extent to which preconception care was provided for women attending fertility clinics. The finding of this study is in consonance with that of Umar et al. (2019) whose study among women in Usmanu Danfodiyo University Teaching Hospital Sokoto, North-Western Nigeria showed that preconception care was provided to a high extend. The similarity found between this study and the previous ones might be due to the homogeneity of the study respondents as both studies were carried out among women of reproductive age attending healthcare facilities.

The result revealed that preconception care has a high impact on maternal health outcomes which were outlined thus: preconception care increases the chances of successful pregnancy, it helps to mitigate risk factors before and during pregnancy, it helps woman to know the right drug to be taken, thereby curbing drug/substance abuse, and it helps to reduce the risk of complications during pregnancy. The result of this study is in line with that of Dean et al. (2014) whose study onpreconception care: closing the gap in the continuum of care to accelerate improvements in maternal, newborn and child health showed improved outcomes from preconception care. The finding of this study corroborates that of Hemsing et al. (2017) which showed that preconception care had a high impact on maternal health outcomes. The finding of this study is akin to that of Lassi et al. (2019) whose study on effects of preconception care on maternal and birth outcomes in low- and middle-income countries showed that preconception care had a high impact on maternal health outcomes. The similarity found between this study and the previous ones might be due to the homogeneity of the study respondents as both studies were carried out among women of reproductive age attending healthcare facilities.

The result showed that the factors influencing preconception care in selected fertility clinics in Port Harcourt, Rivers State were: poor awareness, underlying medical conditions of women, affordability of care, and accessibility of care. The result of this study is in consonance with that of Ganle et al. (2016) which showed knowledge/awareness as a key factor which influence preconception care of women of reproductive age. The finding of this study is in consonance with that of Umar et al. (2019) studied the awareness and perception of preconception care among women in Usmanu Danfodiyo University Teaching Hospital Sokoto, North-Western Nigeria which revealed that awareness and perception of preconception are major factors influencing preconception care among women of reproductive age. The similarity found between this study and the previous ones might be due to the homogeneity of the study respondents as both studies were carried out among women of reproductive age attending healthcare facilities.

## Conclusion

Based on the findings of the study, it was concluded that, preconception care plays a pivotal role in enhancing a healthy conception and maternal health outcomes in selected fertility clinics in Port Harcourt, Rivers State, Nigeria such as: increasing the chances of successful pregnancy, mitigate risk factors before and during pregnancy, and reducing the risk of complications during pregnancy.

## Recommendations

The following recommendations were made based on the findings of the study:

1. The ministry of health should create awareness and incorporate preconception care into routine maternal healthcare services at the primary healthcare facilities, to achieve better feto-maternal outcome.
2. Stakeholders in the health sector should promote preconception care in the maternity clinics to have more women utilize the services for better maternal health outcomes.
3. Healthcare professionals rendering preconception care services to women should consider the factors influencing preconception care and tackle it so that it will not deter the effectiveness of the care given.

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